MATERIAL SAFETY DATA SHEET

SRM Supplier: National Institute of Standards and Technology
Standard Reference Materials Program
Bldg. 202 Rm. 211
Gaithersburg, Maryland 20899

SRM Number: 2576
MSDS Number: 2576
SRM Name: Lead Paint Film for Portable X-Ray Fluorescence Analyzers
Date of Issue: October 1992
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SECTION I. MATERIAL IDENTIFICATION

Material Name: Lead Paint Film for Portable X-ray Fluorescence Analyzers

Description: SRM 2576 consists of a 7.6 cm x 10.2 cm polyester sheet, coated with a single, uniform paint layer. The paint layer and the polyester sheet are approximately 0.04 mm and 0.2 mm thick respectively. The sheet is coated with a clear, thin, plastic laminate to protect the paint layer from abrasion. A known concentration of lead carbonate was dispersed in a commercial paint vehicle to prepare the lead paint.

NOTE: As long as this SRM is not modified, the lead carbonate and/or lead contained in the paint is not hazardous because this material is overcoated with a clear, thin plastic laminate to protect the paint layer. **DO NOT remove this coating. Any damage to this coating may disperse lead carbonate dust particles into the air.**

Other Designations: **Lead Carbonate:** carabonic acid, lead (2^+); carbonate; dibasic lead carbonate; plumbous carbonate; cerusite

Name	Chemical Formula	CAS Registration Number
Lead	Pb	7439-92-1
Lead Carbonate	$PbCO_3$	598-63-0

DOT Classification: Not regulated by DOT

Manufacturer/ Supplier: Available from a number of suppliers*

***The paint layers on polyester sheets were prepared by an automated coating process by Color Communication, Poughkeepsie, NY. The lead paint was prepared by DL Laboratories, New York, NY.

SECTION II. HAZARDOUS INGREDIENTS

Hazardous Components	Nominal Concentration	Exposure Limits and Toxicity Data*
Lead (from lead carbonate)	5.6 mg/cm^2	OSHA TLV-TWA: 50 $\mu g/m^3$ (as Pb)
		OSHA TWA Action Level (8 h): 30 $\mu g/m^3$ (as Pb)
		ACGIH TLV-TWA: 0.05 mg/m^3 (as Pb)
Lead Carbonate	7.2 mg/cm^2	Human, Oral: LD_{LO}: 571 mg/kg (as $PbCO_3$)
		Man, Oral: TD_{LO}: 214 mg/kg/ 4 weeks (as $PbCO_3$)

*Exposure limits and toxicity data are given for lead carbonate, based on lead, as it poses the more severe health hazard.

SECTION III. PHYSICAL/ CHEMICAL CHARACTERISTICS

Lead Carbonate
Appearance and Odor: White to gray powder
Relative Molecular Mass: 267.21
Density: 6.6 g/cm^3
Decomposition Point: 315 °C – 400 °C
Melting Point: Not Available
Solubility in Water: 0.00011 %
Solubility in Other Compounds: Soluble in acids, acetic acid, dilute nitric acid, and alkali **Insoluble** in alcohol and ammonia

SECTION IV. FIRE AND EXPLOSION HAZARD DATA

Flash Point: N/A

Autoignition Temperature: N/A

Flammability Limits in Air (Volume %): UPPER: N/A
LOWER: N/A

Extinguishing Media: Use regular dry chemical, carbon dioxide, water or regular foam.

Special Fire Procedures: Move container from fire hazard if possible. Avoid breathing vapors or dust. Fire fighters should wear a self-contained breathing apparatus with full facepiece and operated in pressure-demand or other positive pressure mode.

Unusual Fire and Explosion Hazards: Lead carbonate is a negligible fire hazard.

SECTION V. REACTIVITY DATA

Stability: **X** **Stable** ____ **Unstable**

Conditions to Avoid: Avoid heat, flames, sparks, and other sources of ignition. Avoid incompatible materials.

Incompatibility (Materials to Avoid): Lead carbonate is incompatible with acids, halogens, and oxidizing materials.

See Section IV: *Fire and Explosion Hazard Data*

Hazardous Decomposition or Byproducts: Oxides of lead and carbon

Hazardous Polymerization: _____ **Will Occur** **X** **Will Not Occur**

SECTION VI. HEALTH HAZARD DATA

Route of Entry: **X** **Inhalation** _____ **Skin** **X** **Ingestion**

Health Hazards (Acute and Chronic): Lead and Lead Compounds: This material may be harmful by inhalation or ingestion and is irritating to the mucous membranes and upper respiratory tract. Absorption of large amounts of lead or lead compounds may cause a metallic taste, thirst, a burning sensation in the mouth and throat, salivation, abdominal pain with severe colic, vomiting, diarrhea, fatigue, or sleep disturbances. Other signs and symptoms of exposure include metal fume fever (an influenza-like illness), disorientation, tingling sensation, convulsions, or

paralysis. Prolonged or repeated exposure to low levels of lead may result in an accumulation in body tissues and exert adverse effects on the blood, nervous system, heart, endocrine and immune systems, kidneys, and reproduction. Lead may cause birth defects. It is also suspected as a potential carcinogen in animals.

Medical Conditions Generally Aggravated by Exposure: Blood disorders, nervous system disorders, gastrointestinal disorders, and respiratory disorders

Listed as a Carcinogen/Potential Carcinogen (Lead):

	Yes	No
In the National Toxicology Program (NTP) Report on Carcinogens	____	_X_
In the International Agency for Research Cancer (IARC) Monographs	_X*_	___
By the Occupational Safety and Health Administration (OSHA)	____	_X_

* The IARC classifies lead and inorganic lead compounds as Group 2B: Possibly Carcinogenic to Humans.

EMERGENCY AND FIRST AID PROCEDURES:

Skin Contact: Lead is not absorbed through the skin. Remove contaminated shoes and clothing. Rinse affected area with large amounts of water followed by washing the area with soap and water. Obtain medical assistance if necessary.

Eye Contact: Immediately flush eyes, including under the eyelids, with copious amounts of water for at least 15 minutes. Obtain medical assistance if necessary.

Inhalation: If inhaled, remove the victim to fresh air. If breathing is difficult, give oxygen; if victim is not breathing, give artificial respiration. Obtain medical assistance if necessary.

Ingestion: If ingested, wash out mouth with water. **DO NOT** induce vomiting. Obtain medical assistance immediately.

TARGET ORGAN(S) OF ATTACK: Blood, heart, nervous system, endocrine system, respiratory system, immune system, and kidneys. This material is also a *teratogen* (causes fetal damage).

SECTION VII. PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to be taken in Case Material Is Released or Spilled: Small dry spills can be gathered and placed into containers for later disposal. Residue should be cleaned up using a high-efficiency particulate filter vacuum.

Waste Disposal: Follow all federal, state, and local regulations.

Handling and Storage: This material is overcoated with a clear thin plastic laminate to protect the paint layer. **DO NOT** remove this coating. Any damage to this coating may disperse lead carbonate dust particles into the air.

Store the paint film at a ambient room temperature away from direct sunlight.

SECTION VIII. SOURCE DATA/OTHER COMMENTS

Sources: MDL Information Systems, Inc., MSDS *Lead Carbonate*, June 2, 1999.

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Disclaimer: Physical and chemical data contained in this MSDS are provided for use in assessing the hazardous nature of the material. The MSDS was prepared carefully, using current references; however, NIST does not certify the data on the MSDS. The certified values for this material are given only on the NIST Certificate of Analysis.